EXHIBIT 1
Partially Redacted
Public Version

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA
SAN JOSE DIVISION

CISCO SYSTEMS, INC.,	Case No. 5:14-cv-05344-BLF (PSG)
Plaintiff,	
v.	
ARISTA NETWORKS, INC.,	
Defendant.	

EXPERT REPORT OF JOHN R. BLACK, JR.

June 3, 2016

**CONTAINS HIGHLY CONFIDENTIAL MATERIAL
SUBJECT TO PROTECTIVE ORDER**

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John R. Black, Jr.

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as well as what fonts to use, font sizes, graphical images, animations, and so forth. A

GUI is a very "content-rich" experience with a large array of design decisions for the

creator. In fact, how best to design a user interface of this kind is considered a research

area within Computer Science typically called "User Interface Design." One can take

classes, read books, attend conferences, and even obtain a PhD in User Interface Design.

But, in my experience, no one has ever offered a class, written a book, written a research

paper or earned a PhD related to the design of a command line interface.

119.   Although there certainly are design choices to be made when designing a

CLI, the choices are relatively few: what prompt to use, what modes to use, what

keywords should be used and in what order, etc. Most software authors elect to simply

follow the conventions of the CLIs that preceded it, just as the authors at Cisco, Arista,

Juniper and other NOS vendors did. In my opinion, they did this because the value in

retaining the familiar feeling and behavior of preexisting CLIs exceeded any advantages

that might be obtained by making a different type of CLI. Moreover, it really was not

and is not possible to make a dramatically different CLI given the inherent constraints on

that interface method: there are just not that many choices to be made on how to organize

a finite set of words into a set of short commands.

H.   **Cisco IOS and other Cisco OS**

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     121.   Although GUIs have sometimes been provided for selected Cisco products, and although management protocols such as SNMP and NETCONF/YANG have been implemented in most Cisco products, the CLI is ever-present as an available interface to Cisco's devices and the one that most engineers know best.

    122.   In 1998, Cisco introduced its certification program by announcing the CCNA ("Cisco Certified Network Associate") which required that aspiring Cisco experts pass a comprehensive exam covering a range of networking technologies. Many of the exam questions then and today require specific knowledge of Cisco IOS, and the only interface used for these exams is the CLI.[33] Since this time, Cisco has greatly expanded

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[33] This statement is to the best of my knowledge. If any other interface is used on any Cisco certification exams, I am unaware of it.

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